

ICM-9202-27 Numerical Minimization of the Landau-de Gennes Free Energy for Liquid Crystals in Finite Cylindrical Containments, E.C. Gartland, Jr. and T.A. Davis, Technical Reports of the ALCOM Symposium "Liquid Crystals: Surfaces and Finite Size Effects," March 12-13, 1992.

ABSTRACT: Included here are two technical reports from an oral and a poster presentation given by the authors at the ALCOM Symposium "Liquid Crystals: Surfaces and Finite Size Effects," March 12-13, 1992. The brief reports describe a project (which is in progress) to develop a numerical package to compute equilibrium configurations of liquid crystals in cylindrical geometry using the Landau-de Gennes model of the free energy. The package uses finite element analysis, large sparse optimization, and numerical bifurcation.